



US005505933A

United States Patent

[19]

Norfleet et al.**Patent Number:** **5,505,933****[45] Date of Patent:** **Apr. 9, 1996****[54] DESENSITIZING ANTI-TARTAR DENTIFRICE**

[75] Inventors: **James Norfleet**, Plainfield; **Willie J. Carter**, Belle Mead; **Matthew J. Frankel**, Franklin Park; **Abdul Gaffar**, Princeton, all of N.J.

[73] Assignee: **Colgate Palmolive Company**, New York, N.Y.

[21] Appl. No.: **405,047**

[22] Filed: **Mar. 15, 1995**

Related U.S. Application Data

[62] Division of Ser. No. 265,883, Jun. 27, 1994.

[51] Int. Cl.⁶ **A61K 7/16**; A61K 7/18

[52] U.S. Cl. **424/52**; 424/49; 424/57

[58] Field of Search 424/49-58

[56] References Cited**U.S. PATENT DOCUMENTS**

3,821,117	6/1974	Breece et al.	252/99
3,863,006	1/1975	Hodosh	424/49
4,057,621	11/1977	Pashley et al.	424/49
4,283,385	8/1981	Dhabhar et al.	424/52
4,357,318	11/1982	Shah et al.	424/52
4,631,185	12/1986	Kim	424/49
4,645,662	2/1987	Nakashima et al.	424/52
4,701,223	10/1987	Eoga	134/2
4,751,072	6/1988	Kim	424/49
4,806,340	2/1989	Gaffar et al.	424/52
4,807,649	2/1989	Eoga	134/2
4,889,712	12/1989	Gaffar et al.	424/52
4,894,220	1/1990	Nabi et al.	424/52
4,925,654	5/1990	Gaffar et al.	424/52
4,931,273	6/1990	Gaffar et al.	424/52
4,933,171	6/1990	Bristow et al.	424/47
4,992,258	2/1991	Mason	424/49
5,015,466	5/1991	Parran et al.	424/52
5,015,467	5/1991	Smither et al.	424/52
5,037,635	8/1991	Nabi et al.	424/52
5,087,444	2/1992	Jackson et al.	424/52
5,156,835	10/1992	Nabi et al.	424/52
5,180,578	1/1993	Gaffar et al.	424/52
5,188,820	2/1993	Cummins et al.	424/52
5,234,688	8/1993	Gaffar et al.	424/52
5,240,697	8/1993	Norfleet et al.	424/52
5,252,577	10/1993	Brever et al.	424/49
5,256,402	10/1993	Prencipe et al.	424/53

5,260,062	11/1993	Gaffar et al.	424/52
5,268,167	12/1993	Tung	424/52
5,270,031	12/1993	Lim et al.	424/49
5,292,526	3/1994	Gaffar et al.	424/52
5,334,375	8/1994	Nabi et al.	424/52
5,352,439	10/1994	Norfleet et al.	424/52
5,374,417	12/1994	Norfleet et al.	424/52

FOREIGN PATENT DOCUMENTS

9200721 1/1992 WIPO .

OTHER PUBLICATIONS

Derwent Abstract of WO/PCT 9200721 (Jan. 23, 1990) Nelson & Smitherman (16 p.) (U.S. Jul. 11, 1992). Derwent Abstract of Lion JP 59167509 (Sep. 21, 1984) (Potassium Hydroxide & Potassium Dinhosphonate).

Primary Examiner—Shep K. Rose
Attorney, Agent, or Firm—Murray M. Grill; Robert L. Stone

[57] ABSTRACT

An oral composition, such as a toothpaste, includes an anti-tartar proportion of a polyphosphate anti-tartar agent (preferably with synthetic anionic polymeric polycarboxylate or equivalent, and fluoride) and a desensitizing proportion of a tooth pain inhibiting potassium salt which passes through exposed dentin tubules to tooth nerves or neurons, which salt can be potassium nitrate, potassium citrate or potassium oxalate, so that it helps to prevent tartar from forming on the teeth and also lessens any pain experienced by persons contacting their sensitive teeth with the oral composition. Preferably the oral composition is a desensitizing anti-tartar toothpaste or gel which, when the teeth are brushed with it, aids in removal of at least some tartar and prevents its reappearance, and at the same time diminishes any tooth pain that the brusher would otherwise experience due to such brushing. In preferred toothpastes the anti-tartar agent and the desensitizing agent are both potassium compounds and other components of the toothpaste, such as the detergent or surfactant, thickener, water soluble fluoride, anionic polymeric polycarboxylate, sweetener and any anti-calculus agent present, when they may be present as salts, will also be potassium salts. In place of the mentioned anti-tartar agents there may be employed other anti-calculus compounds, such as AHP (azacycloheptane-2-2-diphosphonic acid) or corresponding alkali metal salt, preferably the potassium salt, and in such case it is very desirable for other components of the toothpaste to be in the forms of their potassium salts.

15 Claims, No Drawings